

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-2 (Canceled).

Claim 3 (Currently Amended): A code conversion apparatus comprising:

input means for inputting ~~compressed and transformed input codes~~ a code sequence having a JPEG2000 coding format and including code data and header information that is progressively arranged with respect to one of resolution levels, layers, components and positions;

header information rewriting means for rewriting ~~only header information within the codes so as to partially decode the input codes~~ information related to one of the resolution levels, the layers, the components and the positions of the header information in the code sequence, so as to partially decode the code sequence that is input by said input means with respect to one of the resolution levels, the layers, the components and the positions; and

output means for outputting ~~the codes, including rewritten header information~~ the code sequence, including the header information that is rewritten by said header information rewriting means, to a target object.

Claim 4 (Currently Amended): A code conversion apparatus comprising:

an input section configured to input ~~compressed and transformed input codes~~ a code sequence having a JPEG2000 coding format and including code data and header information that is progressively arranged with respect to one of resolution levels, layers, components and positions;

a header information rewriting section configured to rewrite ~~only header information within the codes so as to partially decode the input codes~~ information related to one of the

resolution levels, the layers, the components and the positions of the header information in the code sequence, so as to partially decode the code sequence that is input by said input section with respect to one of the resolution levels, the layers, the components and the positions; and

an output section configured to output the codes, including rewritten header information the code sequence, including the header information that is rewritten by said header information rewriting section, to a target object.

Claim 5 (Currently Amended): The code conversion apparatus as claimed in claim 4, wherein the ~~codes are JPEG2000 format codes which have~~ code sequence has been subjected to a discrete wavelet transform.

Claim 6 (Currently Amended): The code conversion apparatus as claimed in claim 4, wherein the header information rewritten by said header information rewriting section includes a number of elements in a highest level of a progressive order and ~~header~~ information related to the elements.

Claim 7 (Original): The code conversion apparatus as claimed in claim 6, wherein the elements in the highest level of the progressive order are layers (L), and the header information to be rewritten includes information related to a number of the layers.

Claim 8 (Original): The code conversion apparatus as claimed in claim 7, wherein said header information rewriting section rewrites the header information to reduce by n a number of layers of a marker segment SGcod of a default coding style marker (COD) within the header information when reducing the number of layers by n.

Claim 9 (Original): The code conversion apparatus as claimed in claim 6, wherein the elements in the highest level of the progressive order are resolution levels (R), and the header information to be rewritten is information related to an image size, a tile size, a number of resolution levels and a number of bit planes for every sub-band to be encoded.

Claim 10 (Original): The code conversion apparatus as claimed in claim 9, wherein the header information includes information related to a precinct size when a precinct is user defined.

Claim 11 (Original): The code conversion apparatus as claimed in claim 9, wherein said header information rewriting section multiplies  $1/2^n$  to the image size and the tile size, reduces the number of resolution levels by n, reduces the precinct size by  $3n$ , and deletes entries amounting to  $3n$  bytes and related to the number of bit planes for every sub-band to be encoded, when multiplying the resolution level by  $1/2^n$ .

Claim 12 (Original): The code conversion apparatus as claimed in claim 6, wherein the elements in the highest level of the progressive order are a number of components (C), and the header information to be rewritten includes a number of components and information related to sub-sampling for every component.

Claim 13 (Currently Amended): The code conversion apparatus as claimed in claim 12, wherein the header information to be rewritten includes information related to existence of a component transform when ~~codes have~~ the code sequence has been subjected to component transform.

Claim 14 (Original): The code conversion apparatus as claimed in claim 12, wherein said header information rewriting section reduces by  $3n$  a value of a marker segment Lsiz of a size marker (SIZ) within the header information, reduces by  $n$  a value of a marker segment Csiz, and deletes an amount corresponding to  $n$  components with respect to marker segments Ssiz, XRsiz and Rsiz when reducing the number of components by  $n$ .

Claim 15 (Currently Amended): The code conversion apparatus as claimed in claim 14, wherein said header information rewriting section ~~appropriately~~ rewrites to 0 a content of a marker segment SGcod of a default coding style marker (COD) within the header information, as information related to existence of component transform, when the ~~codes~~ code sequence has been subjected to component transform.

Claim 16 (Original): The code conversion apparatus as claimed in claim 4, wherein said header information rewriting section rewrites header information related to image size.

Claim 17 (Original): The code conversion apparatus as claimed in claim 16, wherein said header information rewriting section rewrites header information including a marker segment Isot indicating a tile number of a tile start marker (SOT).

Claim 18 (Currently Amended): The code conversion apparatus as claimed in claim 4, further comprising:

a code deleting section configured to delete a code which is no longer a target of a partial decoding due to rewriting of the header information by said header information rewriting section.

Claim 19 (Currently Amended): The code conversion apparatus as claimed in claim 9, wherein said header information rewriting section rewrites only header information for a resolution level so that the resolution level becomes a multiple of 2 to the Nth power ( $2^N$ ) closest to a desired multiplication factor which is not 2 to the Nth power ( $2^N$ ) but multiplied to the resolution level to obtain a desired resolution level, and further comprising:

a decoding section configured to decode the ~~codes~~ code sequence including the rewritten header information; and

a final multiplication factor adjusting section configured to adjust an image obtained by said decoding section so as to have the desired resolution level, based on an interpolation method using interpolation or decimation.

Claim 20 (Withdrawn): A code conversion apparatus comprising:

input means for inputting compressed and transformed input codes of an original image;

header information rewriting means for rewriting only header information within the codes so as to decode the codes into an image having a higher resolution than the original image; and

output means for outputting the codes, including rewritten header information, to a target object.

Claim 21 (Withdrawn): A code conversion apparatus comprising:

an input section to input compressed and transformed input codes of an original image;

a header information rewriting section to rewrite only header information within the codes so as to decode the codes into an image having a higher resolution than the original image; and

an output section to output the codes, including rewritten header information, to a target object.

Claim 22 (Withdrawn): The code conversion apparatus as claimed in claim 21, wherein the codes are JPEG2000 format codes which have been subjected to a discrete wavelet transform.

Claim 23 (Withdrawn): The code conversion apparatus as claimed in claim 21, wherein the header information rewritten by said header information rewriting section includes a number of elements in a highest level of a progressive order, and header information related to the elements, including an image size, a tile size and a number of resolution levels.

Claim 24 (Withdrawn): The code conversion apparatus as claimed in claim 23, wherein said header information rewriting section multiplies  $2^n$  to the image size and the tile size, and increases the number of resolution levels by  $n$ , when multiplying the resolution level by  $2^n$ .

Claim 25 (Withdrawn): The code conversion apparatus as claimed in claim 21, wherein said header information rewriting section rewrites only header information for a resolution level so that the resolution level becomes a multiple of 2 to the  $N$ th power ( $2^N$ )

closest to a desired multiplication factor which is not 2 to the Nth power ( $2^N$ ) but multiplied to the resolution level to obtain a desired resolution level, and further comprising:

a decoding section to decode the codes including the rewritten header information;  
and

a final multiplication factor adjusting section to adjust an image obtained by said decoding section so as to have the desired resolution level, based on an interpolation method using interpolation or decimation.

Claim 26 (Canceled).

Claim 27 (Currently Amended): A code conversion method comprising the steps of:

- (a) ~~inputting compressed and transformed input codes~~ a code sequence having a JPEG2000 coding format and including code data and header information that is progressively arranged with respect to one of resolution levels, layers, components and positions;
- (b) ~~rewriting only header information within the codes so as to partially decode the input codes~~ information related to one of the resolution levels, the layers, the components and the positions of the header information in the code sequence, so as to partially decode the code sequence that is input by said step (a) with respect to one of the resolution levels, the layers, the components and the positions; and
- (c) ~~outputting the codes, including rewritten header information~~ the code sequence, including the header information that is rewritten by said step (b), to a target object.

Claim 28 (Currently Amended): The code conversion method as claimed in claim 27, wherein the ~~codes are JPEG2000 format codes which have~~ code sequence has been subjected to a discrete wavelet transform.

Claim 29 (Currently Amended): The code conversion method as claimed in claim 27, wherein the header information rewritten by said step (b) includes a number of elements in a highest level of a progressive order and ~~header~~ information related to the elements.

Claim 30 (Original): The code conversion method as claimed in claim 29, wherein the elements in the highest level of the progressive order are layers (L), and the header information to be rewritten includes information related to a number of the layers.

Claim 31 (Original): The code conversion method as claimed in claim 29, wherein the elements in the highest level of the progressive order are resolution levels (R), and the header information to be rewritten is information related to an image size, a tile size, a number of resolution levels and a number of bit planes for every sub-band to be encoded.

Claim 32 (Original): The code conversion method as claimed in claim 31, wherein the header information includes information related to a precinct size when a precinct is user defined.

Claim 33 (Original): The code conversion method as claimed in claim 29, wherein the elements in the highest level of the progressive order are a number of components (C), and the header information to be rewritten includes a number of components and information related to sub-sampling for every component.



Claim 34 (Currently Amended): The code conversion method as claimed in claim 33, wherein the header information to be rewritten includes information related to existence of a component transform when ~~codes have~~ the code sequence has been subjected to component transform.

Claim 35 (Original): The code conversion method as claimed in claim 27, wherein said step (b) rewrites header information related to image size.

Claim 36 (Original): The code conversion method as claimed in claim 35, wherein said step (b) rewrites header information including a marker segment Isot indicating a tile number of a tile start marker (SOT).

Claim 37 (Original): The code conversion method as claimed in claim 27, further comprising the steps of:

(d) deleting a code which is no longer a target of a partial decoding due to rewriting of the header information by said step (b).

Claim 38 (Withdrawn): A code conversion method comprising the steps of:

- (a) inputting compressed and transformed input codes of an original image;
- (b) rewriting only header information within the codes so as to decode the codes into an image having a higher resolution than the original image; and
- (c) outputting the codes, including rewritten header information, to a target object.

Claim 39 (Withdrawn): The code conversion method as claimed in claim 38, wherein the codes are JPEG2000 format codes which have been subjected to a discrete wavelet transform.

Claim 40 (Withdrawn): The code conversion method as claimed in claim 21, wherein the header information rewritten by said step (b) includes a number of elements in a highest level of a progressive order, and header information related to the elements, including an image size, a tile size and a number of resolution levels.

Claim 41 (Canceled).

Claim 42 (Currently Amended): A computer-readable storage medium which stores a program for causing a computer to carry out a code conversion process, said program comprising:

an input procedure causing the computer to input ~~compressed and transformed input codes~~ a code sequence having a JPEG2000 coding format and including code data and header information that is progressively arranged with respect to one of resolution levels, layers, components and positions;

a header information rewriting procedure causing the computer to rewrite ~~only header information within the codes so as to partially decode the input codes~~ information related to one of the resolution levels, the layers, the components and the positions of the header information in the code sequence, so as to partially decode the code sequence that is input by said input procedure with respect to one of the resolution levels, the layers, the components and the positions; and

an output procedure causing the computer to output ~~the codes, including rewritten header information~~ the code sequence, including the header information that is rewritten by said header information rewriting procedure, to a target object.

Claim 43 (Currently Amended): The computer-readable storage medium as claimed in claim 42, wherein the ~~codes are JPEG2000 format codes which have~~ code sequence has been subjected to a discrete wavelet transform.

Claim 44 (Currently Amended): The computer-readable storage medium as claimed in claim 42, wherein the header information rewritten by said header information rewriting procedure includes a number of elements in a highest level of a progressive order and ~~header~~ information related to the elements.

Claim 45 (Original): The computer-readable storage medium as claimed in claim 44, wherein the elements in the highest level of the progressive order are layers (L), and the header information to be rewritten includes information related to a number of the layers.

Claim 46 (Original): The computer-readable storage medium as claimed in claim 44, wherein the elements in the highest level of the progressive order are resolution levels (R), and the header information to be rewritten is information related to an image size, a tile size, a number of resolution levels and a number of bit planes for every sub-band to be encoded.

Claim 47 (Original): The computer-readable storage medium as claimed in claim 46, wherein the header information includes information related to a precinct size when a precinct is user defined.

Claim 48 (Original): The computer-readable storage medium as claimed in claim 44, wherein the elements in the highest level of the progressive order are a number of components (C), and the header information to be rewritten includes a number of components and information related to sub-sampling for every component.

Claim 49 (Currently Amended): The computer-readable storage medium as claimed in claim 48, wherein the header information to be rewritten includes information related to existence of a component transform when ~~codes have~~ the code sequence has been subjected to component transform.

Claim 50 (Original): The computer-readable storage medium as claimed in claim 42, wherein said header information rewriting procedure rewrites header information related to image size.

Claim 51 (Original): The computer-readable storage medium as claimed in claim 50, wherein said rewriting step includes rewriting header information including a marker segment Isot indicating a tile number of a tile start marker (SOT).

Claim 52 (Original): The computer-readable storage medium as claimed in claim 43, wherein said program further comprises:

a deleting procedure causing the computer to delete a code which is no longer a target of a partial decoding due to rewriting of the header information by said header information rewriting procedure.

Claim 53 (Withdrawn): A computer-readable storage medium which stores a program for causing a computer to carry out a code conversion process, said program comprising:

an input procedure causing the computer to input compressed and transformed input codes of an original image;

a header information rewriting procedure causing the computer to rewrite only header information within the codes so as to decode the codes into an image having a higher resolution than the original image; and

an output procedure causing the computer to output the codes, including rewritten header information, to a target object.

Claim 54 (Withdrawn): The computer-readable storage medium as claimed in claim 53, wherein the codes are JPEG2000 format codes which have been subjected to a discrete wavelet transform.

Claim 55 (Withdrawn): The computer-readable storage medium as claimed in claim 53, wherein the header information rewritten by said header information rewriting procedure includes a number of elements in a highest level of a progressive order, and header information related to the elements, including an image size, a tile size and a number of resolution levels.

Claim 56 (New): A code conversion apparatus comprising:  
an input section configured to input compressed and transformed input codes;  
a header information rewriting section configured to rewrite only header information within the codes so as to partially decode the input codes; and

an output section configured to output the codes, including rewritten header information, to a target object,

wherein the header information rewritten by said header information rewriting section includes a number of elements in a highest level of a progressive order and information related to the elements.

Claim 57 (New): A computer-readable storage medium which stores a program for causing a computer to carry out a code conversion process, said process comprising:

inputting compressed and transformed input codes;

rewriting only header information within the codes so as to partially decode the input codes; and

outputting the codes, including rewritten header information, to a target object,

wherein the rewritten header information includes a number of elements in a highest level of a progressive order and information related to the elements.